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EXAMINER	
BURCH, MELODY M	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,440	NAMUDURI, CHANDRA SEKHAR	
	Examiner	Art Unit	
	Melody M. Burch	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *5,10,15,17 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-9,11-14,16,18,20-22,24-27,29,31 and 33* is/are rejected.

7)☒ Claim(s) *19,23,30 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 March 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the electrodes claimed in claim 26 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The amendment filed 3/17/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the details of new figure 8. Although the originally filed disclosure included support for electrodes, one of the electrodes replacing coil 200 and the other electrode being placed on either the sidewall or the hub (see paragraph [0038] for support) (Examiner notes that figure 8 is a modified version of figure 3 adapted to accommodate ER-fluid), the original disclosure does not provide support for the elimination of element 204 on the hub 154 in the modification of figure 3 to accommodate ER-fluid.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

3. Claim 24 is objected to because of the following informalities: the phrase "The damper damping apparatus" in line 1 should be changed to --The damping apparatus-- to maintain claim language consistency. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6-9, 11-14, 16, 18, 20-22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4946131 to Weyand in view of US Patent 5878997 to Miesner.

Re: claims 1, 2, 7, and 12. Weyand shows in figure 1 a damping apparatus comprising: a linear to rotary conversion mechanism comprising a translatable member 10 that is adapted for generally linear translation in a forward and a reverse direction and a rotatable member 34 comprising a rotatable shaft that is rotatably coupled to the translatable member; wherein translation of the translatable member in one of the forward or the reverse directions produces a forward or a reverse rotation of the rotatable member and shaft, respectively, and a damping mechanism comprising a hub 32 that is fixed to the shaft.

Weyand includes the limitation of damping by movement of the hub 32 through a viscous fluid 42 and discloses changing the viscosity of the fluid in col. 3 lines 4-5, but does not include the limitation of a means for generating a single electromagnetic field in response to an applied electrical signal that may be continuously varied in response to an input signal that is representative of a desired damping force and a fluid having a viscosity that may be continuously varied by application of the electromagnetic field that is in touching contact with the hub, wherein application of the variable electromagnetic field to the fluid produces changes in the viscosity of the fluid that in turn provides variable resistance to rotation of the hub and translation of the translatable member.

Miesner teaches in figure 1 the use of a damper having a hub 40 and a means for generating a single electromagnetic field in response to an applied electrical signal that may be continuously varied in response to an input signal representative of a desired damping force and a fluid 35 that is in touching contact with the hub wherein application of the variable electromagnetic field to the fluid produces changes in the viscosity of the fluid that in turn provides variable resistance to rotation of the hub and translation of the translatable member as taught in lines 5-7 of the abstract and in col. 4 lines 38-48.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the damping apparatus of Weyand to have included an automatic means of providing variable resistance to the movement of the hub, as taught by Miesner, in order to provide a means of adjusting the damping

characteristics of the damper apparatus without manually altering the mechanical structure of the apparatus.

Re: claims 3, 8, 13, and 24. Weyand, as modified, teaches in Miesner the limitation wherein the means for applying an electromagnetic field is a coil as taught in col. 6 lines 1-4 of Miesner that is located proximate the hub as shown in figure 1 of Miesner and MR fluid as taught in lines 1-2 of the abstract of Miesner (the cylindrical disk in claims 24 and 33 is the cylindrical bottom surface of element 32).

Re: claims 4, 9, and 14. In an alternate interpretation Weyand, as modified, teaches in figure 2 of Weyand a translatable member 34 (34 undergoes a slight axial movement as disclosed in col. 2 lines 61-62 and a rotatable member 10 (member capable of being rotated along the threads) comprises a ball screw.

Re: claims 6 and 11. Weyand, as modified, describe the invention as set forth above in the rejection of claim 1 and also includes (as shown in figure 1 of Weyand) a housing 14 having a first end shown in the area of the lead line of number 48 with a bore that is adapted to rotatably receive the shaft therethrough, a sidewall 30 having an inner surface and a second end opposite the first end, the hub 32 having an outer surface proximate a portion of the inner surface of the sidewall such that the outer surface of the hub and sidewall of the housing define a channel therebetween as shown in figure 1 of Weyand.

Re: claim 16. Weyand, as modified, teach in figure 1 of Weyand the limitation wherein the hub comprises a cylindrical base (the upper part of the hub) having an outer rim and that is fixed to the shaft (integrally fixed) and a cylindrical wall (the lower part of

the hub) extending from the outer rim and located adjacent to the inner surface of the sidewall of the housing, wherein a first portion between the sidewall of the housing and the cylindrical wall of the hub comprises the channel.

Re: claims 18 and 22. Weyand, as modified, teaches in Miesner, the limitation wherein the cylindrical base or upper portion of the hub (where the coil 120 is not located) comprises a non-magnetic material (interpreting the absence of the coil as not having a magnetic material) and the cylindrical wall or lower portion of the hub comprises a magnetic material (where the coil 120 is located).

Re: claim 20. Weyand, as modified, teaches in Weyand the damper further comprising a cylindrical core 20 attached to the second end of the housing and extending along and adjacent to the cylindrical wall of the hub wherein a second portion between the cylindrical wall of the hub and the cylindrical core further comprises the channel as shown in figure 1.

Re: claim 21. Weyand, as modified, teaches in Miesner the limitation wherein the core 50 has a recess in an outer surface and the coil 120 is located within the recess. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the core of Weyand to have included a recess with a coil, as taught by Miesner, in order to provide a means of ensuring that the electromagnetic field reaches the channel to change the viscosity of the fluid.

6. Claims 25-27, 29, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4946131 to Weyand in view of US Patent 5878997 to Miesner as applied to claim 11 and further in view of US Patent 6740125 to Mosler.

Re: claims 25. Weyand, as modified, describes the invention substantially as set forth above, but does not include the limitation of the fluid being an ER fluid.

Mosler teaches in col. 4 line 5 the limitation of a damper including ER fluid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fluid in the damper of Weyand, as modified, to have been ER fluid, as taught by Mosler, in order to provide an alternate means of varying the resistance within a damping system by altering the fluid viscosity.

Re: claim 26. Weyand, as modified, teach in col. 4 of Mosler the use of electrodes 12.

Re: claim 27. See the rejection of claim 14 above.

Re: claim 29. See the rejection of claim 16 above.

Re: claim 31. See the rejection of claim 20 above.

Re: claim 33. See the rejection of claim 24 above.

Allowable Subject Matter

7. Claims 19, 23, 30, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Weyand fails to show or suggest the presence of a lower seal and an upper seal as specifically arranged as required by claims 19, 23, 30, and 32.

Response to Arguments

8. Applicant's arguments filed 3/17/05 have been fully considered but they are not persuasive.

Applicant argues that Weyand does not disclose a rotatable shaft that is rotatably coupled to the translatable member or a damping mechanism comprising a hub that is fixed to the shaft. Examiner notes that the shaft of Weyand has been interpreted as the component in the area of the lead line of number 34 in figure 1 which is rotatable due to linear movement of translatable element 10 and the cooperation of threads 12 and 40 as disclosed in col. 2 lines 35-39. Examiner further notes that the hub has been interpreted as the component in the area of the lead arrow of number 36 and the lead line of number 32. As shown in figure 1 of Weyand the hub is integrally fixed to the shaft.

Applicant also argues that Miesner fails to disclose an outer surface of a hub and sidewall of a housing defining a channel therebetween in which a single electromagnetic field is generated. Examiner notes that both Weyand and Miesner show a channel between an outer surface of the hub and sidewall of the housing. With regards to the limitation of a single electromagnetic field being generated in the channel, Examiner notes that the argument is more specific than the claim recitation. The amended independent claims simply require "a means for generating a single electromagnetic field in response to an applied electrical signal". Examiner notes and Applicant admits in claim 3, for example, that a means for generating a single electromagnetic field is a coil. Examiner maintains that Weyand, as modified, teaches a means for generating a single electromagnetic field as claimed since Weyand, as modified, teach the use of a coil 120 or 130 in figure 1 of Miesner.

In response to Applicant's argument that the proposed combination of Weyand and Miesner renders at least Weyand inoperable for its intended purpose, Examiner notes that Weyand is arranged with a hub moving through a viscous medium for the intended purpose of damping movement. The intensity of the damping may be adjusted by manually adjusting the position of element 18. Miesner is arranged with a hub 40 moving through a medium including MR fluid for the intended purpose of damping movement. The intensity of the damping may be adjusted automatically by changing the properties of the MR fluid using a coil arrangement. Examiner maintains that since both references have an intended purpose of damping movement, the intended purpose of Weyand would not have been negatively affected and that modifying a means of damping movement including a manual adjustment mechanism with a means of damping movement including an automatic adjustment mechanism would have been obvious to one of ordinary skill in the art. Contrary to Applicant's argument that arriving at the present invention would require the elimination of one of the coils of Miesner, Examiner maintains that the claim requires a damping apparatus comprising a means for generating a single electromagnetic field. In light of the use of the open-ended transitional term "comprising", the damping arrangement may include a coil and other elements (including a second coil). The claims, as broadly recited, do not preclude the use of a dual coil arrangement to achieve movement damping.

Finally, Applicant argues that the references fail to include the arrangement wherein the sidewall of the housing partially defines the working channel of the present invention. Examiner notes that the claim language recites "such that the hub and the

sidewall (of housing) form a channel therebetween". As shown in figure 1 of Weyand the sidewall 30 of housing 14 and the outer surface of hub 32 form a channel therebetween. The claim language does not preclude the presence of element 18 between the outer surface of the hub and the sidewall of the housing to assist in forming the channel therebetween. Accordingly, the rejections have been maintained.

9. The objection to the drawings for not showing the ER fluid has been withdrawn. After further review Examiner found that Applicant describes fluid 160 shown in the drawings as either being MR or ER fluid.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mmb
mmb
June 13, 2005
Melody M. Burch
6/13/05